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# Vermette & Co.

Barristers & Solicitors  
Patent and Trademark Agents

Box 40, Granville Square  
Suite 230, 200 Granville Street  
Vancouver, British Columbia  
CANADA V6C 1S4

Telephone: (604) 331 0381  
Facsimile: (604) 331 0382  
E-mail: ip@vermetteco.com

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## VIA FACSIMILIE AND COURIER

European Patent Office  
International Preliminary Examining Authority  
D-80298 Munich  
Germany

Dear Sir/Madam:

**Re: PCT Patent Application No. PCT/CA03/00593**  
**Title: SONICATION TREATMENT OF**  
**POLYCHLORINATED BIPHENYL**  
**CONTAMINATED MEDIA**  
**Applicant: Sonic Environmental Solutions Inc.**  
**Intl. Filing Date: April 23, 2003**  
**Priority: US Appln. 60/374,512 filed April 23, 2002**  
**Our File: 2313 - 101**

In response to the Written Opinion dated December 17, 2003, and pursuant to Article 34 and Rule 66.3, the applicant hereby amends the claims of the present application and submits the following explanatory remarks.. Replacement pages and mark-up pages showing the amendments are enclosed.

The applicant hereby amends the claims in light of the documents cited in the International Search Report, namely, U.S. Pat. No. 4,151,067 issued on April 24, 1979 to Grow. Specifically, claim 33 is amended to incorporate reference to "molten sodium-containing metal." Support for the amendment can be found at page 8, lines 15-18; page 10, lines 21-24; page 11, lines 10-

13; page 13, lines 1-16; page 22, lines 1-4; and page 24, lines 28-30 of the application as published under the PCT.

The applicant submits that the Grow reference does not disclose a molten sodium-containing metal nor a heater for maintaining such a metal in a molten state.

Respectfully submitted,

VERMETTE & CO.

Agent for the Applicant

MGP/kjg

24. The method of claim 14 wherein said treated separated sonicated fluid is recycled for use as said fluid in said method.
- 5 25. The method of claim 1 wherein said sonicating step uses sonication equipment without grinding media.
26. The method of claim 1, wherein said sonicating step occurs in a temperature range of 100-120 °C.
- 10 27. The method of claim 5, wherein said sonicating step occurs in a temperature range of 80-98°C.
28. The method of claim 1, wherein said sonicating step uses a resonating probe contacting said fluid.
- 15 29. The method of claim 1, wherein said sonicating step takes place in one or more chambers mounted axially to a resonating member.
- 20 30. The method of claim 1, wherein said liquid hydrocarbons contain one or more hydrocarbon subcomponents which are not liquids at sonication temperature.
- 25 31. The method according to claim 4, wherein said sonicating step occurs at a minimum temperature of 100°C.
32. The method according to claim 1, wherein said sodium-containing alkali metal is commercially pure sodium metal.
- 30 33. An apparatus for treating polychlorinated biphenyl (PCB) contaminated media, comprising:
- 35 a) a reaction vessel for holding a mixture of said media, and a liquid hydrocarbon-containing fluid, and a molten sodium-containing metal;
- b) a sonicator without grinding media for sonicating said mixture at an audio frequency; and
- c) a heater for controlling the temperature of said mixture

and maintaining said molten sodium-containing metal in a molten state.

- 5 34. The apparatus of claim 33, wherein said sonicator uses a resonating probe contacting said ~~fluid~~ mixture.
35. The apparatus of claim 33, wherein said reaction vessel consists of one or more chambers mounted axially to a resonating member of said sonicator.
- 10 36. The apparatus of claim 33, wherein said reaction vessel includes vents to release gas during sonication.

24. The method of claim 14 wherein said treated separated sonicated fluid is recycled for use as said fluid in said method.
- 5 25. The method of claim 1 wherein said sonicating step uses sonication equipment without grinding media.
26. The method of claim 1, wherein said sonicating step occurs in a temperature range of 100-120 °C.
- 10 27. The method of claim 5, wherein said sonicating step occurs in a temperature range of 80-98°C.
28. The method of claim 1, wherein said sonicating step uses a resonating probe contacting said fluid.
- 15 29. The method of claim 1, wherein said sonicating step takes place in one or more chambers mounted axially to a resonating member.
- 20 30. The method of claim 1, wherein said liquid hydrocarbons contain one or more hydrocarbon subcomponents which are not liquids at sonication temperature.
- 25 31. The method according to claim 4, wherein said sonicating step occurs at a minimum temperature of 100°C.
32. The method according to claim 1, wherein said sodium-containing alkali metal is commercially pure sodium metal.
- 30 33. An apparatus for treating polychlorinated biphenyl (PCB) contaminated media, comprising:
- 35 a) a reaction vessel for holding a mixture of said media, a liquid hydrocarbon-containing fluid, and a molten sodium-containing metal;
- b) a sonicator without grinding media for sonicating said mixture at an audio frequency; and
- c) a heater for controlling the temperature of said mixture

and maintaining said molten sodium-containing metal in a molten state.

5 34. The apparatus of claim 33, wherein said sonicator uses a resonating probe contacting said mixture.

35. The apparatus of claim 33, wherein said reaction vessel consists of one or more chambers mounted axially to a resonating member of said sonicator.

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36. The apparatus of claim 33, wherein said reaction vessel includes vents to release gas during sonication.